

CLAIMS

What is claimed is:

1. A method for redirecting messages of different SS7 protocol variations,  
the method comprising:
  - 5 (a) receiving an SS7 message;
  - (b) determining whether the received SS7 message requires redirection;
  - (c) in response to determining that the message requires redirection, identifying the SS7 protocol variation of the message;
  - 10 (d) encapsulating the received SS7 message in a signaling message control part (SCCP) message of a predetermined SS7 protocol variation;
  - (e) including an indicator in the SCCP message, the indicator identifying the SS7 protocol variation of the received SS7  
15 message;
  - (f) sending the SCCP message to an application; and
  - (g) at the application, using the indicator to process the encapsulated SS7 message.
2. The method of claim 1 wherein the SS7 message comprises an ISUP  
20 message.
3. The method of claim 1 wherein the SS7 message comprises an SCCP message.

4. The method of claim 1 wherein identifying the SS7 protocol variation of the SS7 message comprises determining whether the SS7 message is an ANSI, ITU-I, or ITU-N message.
5. The method of claim 1 wherein including an indicator in the SCCP message comprises including the indicator in a calling party subsystem number field of the SCCP message.
6. The method of claim 1 wherein sending the SCCP message to a service control point includes sending the SCCP message to a service control point over an SS7 signaling link.
10. 7. The method of claim 1 wherein sending the SCCP message to a service control point includes sending the SCCP message to a service control point over an IP signaling link.
8. The method of claim 1 wherein steps (a)-(f) are performed at a signal transfer point and wherein step (g) is performed at a service control point.
15. 9. The method of claim 1 wherein steps (a)-(f) are performed at an SS7/IP gateway and wherein step (g) is performed at an IP-enabled service control point.
10. 10. The method of claim 1 comprising performing global title translation on the received SS7 message and wherein determining whether the received SS7 message requires redirection includes determining whether the received SS7 message requires redirection after performing the global title translation.
- 20

11. The method of claim 1 comprising performing global title translation on the SCCP message to produce a destination point code and wherein sending the SCCP message to an application includes sending the SCCP message to an application corresponding to the destination point code.
- 5
12. A method for redirecting messages of different SS7 protocol variations, the method comprising:
- (a) receiving an SS7 message;
  - (b) determining whether the received SS7 message requires redirection;
  - 10 (c) in response to determining that the message requires redirection, identifying the SS7 protocol variation of the message;
  - (d) encapsulating the received SS7 message in an SCCP message having an SS7 protocol variation corresponding to the identified protocol variation; and
  - 15 (e) sending the SCCP message to an application of the identified protocol variation.
13. The method of claim 12 wherein the SS7 message comprises an ISUP message.
- 20 14. The method of claim 12 wherein the SS7 message comprises an SCCP message.
15. The method of claim 12 identifying the SS7 protocol variation of the message comprises determining whether the message is an ANSI, ITU-I, or ITU-N message.

16. The method of claim 12 wherein sending the message to a service control point of the identified protocol variation includes selecting an outbound linkset for the message based on the identified protocol variation.
- 5 17. The method of claim 12 comprising global title translating the SCCP message and determining a destination point code for the SCCP message and wherein sending the SCCP message to an application of the identified protocol variation includes selecting the application based on the destination point code.
- 10 18. The method of claim 12 wherein sending the SCCP message to an application includes sending the SCCP message to the application over an SS7 signaling link.
- 15 19. The method of claim 12 wherein sending the SCCP message to an application includes sending the SCCP message to the application over an IP signaling link.
20. The method of claim 12 wherein steps (a)-(f) are performed at a signal transfer point and wherein the application resides on a service control point.
- 20 21. The method of claim 12 wherein steps (a)-(f) are performed at an SS7/IP gateway and wherein the application resides on an IP-enabled service control point.
22. The method of claim 12 comprising performing global title translation on the received SS7 message and wherein determining whether the received SS7 message requires redirection includes determining

whether the received SS7 message requires redirection after performing the global title translation.

23. A signaling message routing node for identifying and redirecting messages of different SS7 protocol variations, the signaling message routing node comprising:
- 5
- (a) a link interface module for sending and receiving SS7 messages;
  - (b) a screening function operatively associated with the link interface module for identifying predetermined SS7 messages as redirection candidates;
  - 10 (c) an SS7 protocol variation identification/redirection function operatively associated with the link interface module for receiving the SS7 messages identified by the screening function as redirection candidates, for identifying the SS7 protocol variation of each of the messages, for encapsulating the messages in
  - 15 SCCP messages, and for indicating the protocol variation of the encapsulated messages; and
  - (d) a routing function operatively associated with the link interface modules for routing the SCCP messages to applications for processing the encapsulated SS7 messages.
- 20 24. The signaling message routing node of claim 23 wherein the screening function is adapted to examine at least one of originating point codes, destination point codes, and service indicators in the SS7 messages to identify redirection candidates.

25. The signaling message routing node of claim 23 wherein the screening function comprises a gateway screening function for determining whether or not to allow SS7 messages into a network.
26. The signaling message routing node of claim 23 wherein the SS7  
5 protocol variation identification/redirection function is adapted to determine whether the messages identified as redirection candidates are ITU-I, ITU-N, or ANSI SS7 messages.
27. The signaling message routing node of claim 23 wherein the SS7  
10 protocol variation identification/redirection function is adapted to indicate the protocol variation by inserting a protocol variation indicator in a predetermined field of each SCCP message.
28. The signaling message routing node of claim 27 wherein the predetermined field comprises an SCCP calling party subsystem number field.
- 15 29. The signaling message routing node of claim 23 wherein the SS7 protocol variation identification/redirection function is adapted to indicate the protocol variation by providing separate outbound linksets for each of the SS7 protocol variations and to redirect the SCCP messages to the outbound linkset corresponding to the protocol variation of the  
20 encapsulated SS7 message.
30. The signaling message routing node of claim 23 wherein the messages identified as redirection candidates comprise ISUP messages.
31. The signaling message routing node of claim 23 wherein the messages identified as redirection candidates comprise SCCP messages.